

What is claimed is

1 1. A compact self-ballasted fluorescent lamp,
2 comprising:

3 an arc tube formed by a glass tube double-spirally wound
4 from a middle to both ends thereof around a predetermined
5 axis; and

6 a cylindrical holding member having an end wall where
7 a pair of insertion openings are formed, and holding the arc
8 tube in a state where both end parts of the glass tube are
9 inserted in the insertion openings,

10 wherein a pitch of (a) each end part and (b) an adjacent
11 spiral part in a direction of the axis is larger than a pitch
12 of other adjacent spiral parts, to widen a gap between each
13 end part and the adjacent spiral part, and

14 a minimum distance between (a) a first area that is on
15 an outer surface of a spiral part adjacent to one of the ends
16 in the direction of the axis and (b) a second area that is
17 on a surface of the end wall and that faces the first area,
18 is in a range of 1.5 to 4.0 mm inclusive.

1 2. The compact self-ballasted fluorescent lamp of Claim
2 1, wherein

3 a winding pitch of the glass tube is changed to enlarge
4 at such a position back from each end by 60 to 120° inclusive

5 with respect to the axis, as viewed in the direction of the
6 axis.

1 3. The compact self-ballasted fluorescent lamp of Claim
2 1, wherein

3 a gap between the other adjacent spiral parts is in a
4 range of 1 to 3 mm inclusive, and

5 a distance between (a) a first point that is on each
6 end and (b) a second point that faces the first point and
7 that is on an outer surface of an adjacent spiral part in
8 the direction of the axis, is in a range of 3 to 6 mm inclusive.

1 4. The compact self-ballasted fluorescent lamp of Claim
2 1, further comprising:

3 a globe covering the arc tube; and

4 a case that is fit to cover a circumferential wall of
5 the holding member,

6 wherein a gap is formed between the circumferential wall
7 of the holding member and the case, and the globe is fixed
8 in a state where an opening end thereof is fit in the gap.

1 5. The compact self-ballasted fluorescent lamp of Claim
2 4, wherein

3 wherein the arc tube is thermally connected to the globe
4 via a heat conductive medium, at a coolest position of the

5 arc tube during lighting, or a position in a vicinity of the
6 coolest position.

1 6. The compact self-ballasted fluorescent lamp of Claim
2 1, wherein

3 an inner diameter of the glass tube is in a range of
4 5 to 9 mm inclusive.

1 7. The compact self-ballasted fluorescent lamp of Claim
2 1, wherein

3 an annular outer diameter of the double-spiral arc tube
4 is in a range of 30 to 40 mm inclusive.

1 8. A compact self-ballasted fluorescent lamp,
2 comprising:

3 an arc tube formed by a glass tube double-spirally wound
4 from a middle to both ends thereof around a predetermined
5 axis; and

6 a cylindrical holding member having an end wall on which
7 a pair of tube-holding structures are provided for holding
8 the arc tube in a state where both end parts of the glass
9 tube are inserted in and held by the tube-holding structures,
10 wherein a pitch of (a) each end part and (b) an adjacent
11 spiral part in a direction of the axis is larger than a pitch
12 of other adjacent spiral parts, to widen a gap between each

13 end part and the adjacent spiral part, and
14 a distance between (a) a first point that is at a middle
15 of an area sandwiched between the pair of tube-holding
16 structures in a circumferential direction of the end wall
17 as viewed in the direction of the axis and (b) a second point
18 that is on an outer surface of a spiral part positioned outward
19 with respect to the holding member and facing the first point,
20 is in a range of 1.5 to 4.0 mm inclusive.

1 9. The compact self-ballasted fluorescent lamp of Claim
2 8, wherein

3 a winding pitch of the glass tube is changed to enlarge
4 at such a position back from each end by 60 to 120° inclusive
5 with respect to the axis, as viewed in the direction of the
6 axis.

1 10. The compact self-ballasted fluorescent lamp of Claim
2 8, wherein

3 a gap between the other adjacent spiral parts is in a
4 range of 1 to 3 mm inclusive, and

5 a distance between (a) a first point that is on each
6 end and (b) a second point that faces the first point and
7 that is on an outer surface of an adjacent spiral part in
8 the direction of the axis, is in a range of 3 to 6 mm inclusive.

1 11. The compact self-ballasted fluorescent lamp of Claim
2 8, further comprising

3 a case that is fit to cover a circumferential wall of
4 the holding member,

5 wherein the holding member has, at the circumferential
6 wall, an engagement part that is engaged at an inner surface
7 of the case, the engagement part being at such a position
8 corresponding to the middle of the area sandwiched between
9 the pair of tube-holding structures.

1 12. The compact self-ballasted fluorescent lamp of Claim
2 8, further comprising

3 a globe covering the arc tube; and

4 a case that is fit to cover a circumferential wall of
5 the holding member,

6 wherein a gap is formed between the circumferential wall
7 of the holding member and the case, and the globe is fixed
8 in a state where an opening end thereof is fit in the gap.

1 13. The compact self-ballasted fluorescent lamp of Claim
2 12, wherein

3 the arc tube is thermally connected to the globe via
4 a heat conductive medium, at a coolest position of the arc
5 tube during lighting, or a position in a vicinity of the coolest
6 position.

1 14. The compact self-ballasted fluorescent lamp of Claim
2 8, wherein
3 an inner diameter of the glass tube is in a range of
4 5 to 9 mm inclusive.

1 15. The compact self-ballasted fluorescent lamp of Claim
2 8, wherein
3 an annular outer diameter of the double-spiral arc tube
4 is in a range of 30 to 40 mm inclusive.